

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-9 are presently pending in this application; Claims 1, 2 and 6 having been amended by this present amendment. Support for amended Claims 1-4 and 6-9 can be found in the original specification, claims and drawings.<sup>1</sup> No new matter is presented.

In the outstanding Official Action, Figures 8 and 9 were objected to as not being designated as prior art. The Abstract was objected to for containing legal phraseology and being unclear. Claims 1, 2, 6, and 7 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 1, 2 and 5-7 were rejected under 35 U.S.C. § 102(b) as being anticipated by Nygaard (U.S. Patent 4,099,225, hereinafter Nygaard). Claims 4, 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nygaard in view of *In re Japikse*, 86 USPQ70.

Applicants acknowledge with appreciation the courtesy of the interview granted to Applicants' representatives on March 24, 2004. During the interview, which was attended by Examiner Kitov and Primary Examiner Toatley, proposed claim changes were discussed and Applicants' invention was explained in light of the proposed claim changes. No agreement was reached during the interview, pending the formal submission of a response to the outstanding Official Action.

Figures 8 and 9 were objected to as not being designated by a legend such as "Prior Art". In response, replacement drawing sheets for Figures 8 and 9 are attached, in which Figures 8 and 9 are designated as prior art. Therefore, the objection to the drawings is believed to have been overcome.

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<sup>1</sup> Specification at page 18, line 22 – page 20, line 9.

The Abstract was objected to for containing legal language and for being generally unclear. The Abstract has been rewritten so as to exclude all legal language and more clearly describe the Applicants' invention. Therefore, the objection to the Abstract is believed to have been overcome.

In the interview, the rejections to Claims 1, 2, 6 and 7 under 35 U.S.C. § 112, second paragraph were discussed. Specifically, claim language was discussed that Examiner Kitov indicated would result in the 35 U.S.C. § 112, second paragraph, rejections to Claims 1, 2, 6 and 7 to be overcome. As discussed below, the discussed claim modifications, or analogous variations thereof, have been incorporated in the present amendment.

Claim 1 was rejected because the phrase "input from the exterior" was cited by the Official Action as being indefinite. In the interview, proposed claim language was discussed that the Examiner indicated would overcome the rejection of Claim 1 under 35 U.S.C. § 112, second paragraph, and clarify the intended meaning of Claim 1. In response, this claim language has been incorporated into Claim 1.

Claims 2 and 7 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite because the term "sensitivity" was not deemed to be descriptive. In the interview, Examiner Kitov discussed that replacing the phrase "higher in detection sensitivity" with a phrase not including the term sensitivity would render this rejection moot. In response, the phrase "higher in detection sensitivity" in Claims 2 and 7 has been replaced with the phrase "lower in detected voltage."

Claim 6 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite because the word "one" was not believed to carry any meaning in the claim. In response, the word "one" in Claims 2 and 7 has been removed.

Accordingly, Applicant requests that the rejections to Claims 1, 2, 6 and 7 under 35 U.S.C. § 112, second paragraph, be withdrawn.

The outstanding Official Action asserts that Nygaard teaches all the elements of the claimed invention. Applicants respectfully traverse this rejection.

By way of background, Applicants' invention relates to an inverter module having a three-phase bridge circuit. The circuit includes a plurality of switching elements serially interposed between two power supply terminals supplied with a DC voltage. The module also includes control circuits to control each of the sets of switching elements, and a shunt resistor for detecting current flow across the first and second main power supply terminals. A current detection circuit is included as part of the control circuit for detecting a voltage generated by a current flowing to the shunt resistor. The current detection circuit outputs current abnormality signal indicating current abnormality when the detected voltage is in excess of a prescribed level. This current abnormality signal is transmitted to a fault circuit which receives the current abnormality signal and outputs a stop signal for stopping operation of the at least one of the switching elements. The fault circuit also has a function of outputting/receiving a stop signal to/from an exterior device, and an outputting/receiving a stop signal to and from the control circuit.

Amended Claim 1 recites, *inter alia*, a semiconductor device comprising:

“... said fault circuit has a function of outputting said stop signal to a different control circuit other than said control circuit to which itself belongs while stopping operation of at least one of said first and second switching elements which is controlled by said control circuit to which itself belongs also by said stop signal input from said different control circuit.”

Nygaard describes a protective circuit to be used in an inverter device which includes a fault detection circuit and a control circuit used to control a series of transistors. In evaluating the teachings of Nygaard, it is clear that reference fails to describe a control circuit that outputs a stop signal to a control circuit other than said control circuit to which it belongs, as recited in amended Claim 1. To the contrary, Nygaard describes that the control circuit is configured to output only control signals to control the operation of the transistors

that are part of the control circuit. Upon receiving an error signal from the fault circuit, the control circuit in Nygaard's device immediately ceases operation and all control pulses to the transistors are immediately suppressed.<sup>2</sup> Therefore, Nygaard's control circuit outputs either no signals whatsoever or only control signals used to control the operation of the transistors. Thus, at no point does Nygaard disclose or suggest inputting and/or outputting a stop signal, as recited in amended Claim 1.

Furthermore, though Nygaard has a control circuit 20 driving/controlling an inverter transistor, the control circuit 20 is directed to protecting the inverter transistor by suppressing the delivery of control pulses to the inverter transistor if an error signal (f) is outputted in the common comparators 23-26 detecting various currents. On the contrary, amended Claim 1 recites that the fault circuit has a function of outputting the stop signal to a different control circuit other than the control circuit to which itself belongs while stopping operation of at least one of the first and second switching elements which is controlled by the control circuit to which itself belongs also by the stop signal input from the different control circuit, Nygaard fails to disclose or suggest such a function.

Accordingly, it is respectfully submitted that Nygaard does not anticipate or render obvious the claimed subject matter of amended Claim 1.

Claims 4, 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nygaard in view of *In re Japikse*, 86 USPQ70. The Official Action states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Nygaard to anticipate the claimed invention, because according to the court decision, rearranging parts of an invention involves only routine skill in the art. Applicants respectfully traverse this rejection.

Claim 4 recites, *inter alia*, a semiconductor device comprising:

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<sup>2</sup> Nygaard at column 5, lines 56-64.

“only one of said plurality of control circuits detects said voltage of said shunt resistor, outputs said stop signal and supplies the same to said fault circuit of remaining said control circuit.”

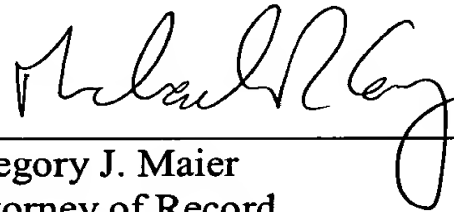
Thus, Claim 4 recites that when a single control circuit detects excess voltage, the circuit is capable of outputting a stop signal to other control circuits. Nygaard fails to describe that the control circuit implemented in his device is capable of input/output of a stop signal whatsoever. Therefore, if the parts Nygaard's device were rearranged such that a plurality of control circuits are present, as recited in Claim 4, the control circuit detecting the excess voltage would have no way of outputting the resultant stop signal to the other control circuits. This configuration would result in the remainder of the control circuits continuing to operate their respective switching elements with excess current, resulting in damage to the switching elements. Therefore, if one of ordinary skill in the art were to rearranging the parts in Nygaard they would not arrive at the configuration recited in Claim 4.

Accordingly, Applicants request that the rejection of Claim 4 under 35 U.S.C. § 103(a) be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-9 is definite and patentably distinguishing over the prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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